Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

TITLE V DRAFT PERMIT NO. V-05-003
CARMEUSE LIME & STONE, INC BLACK RIVER OPERATION
BUTLER, KENTUCKY.
DECEMBER 27, 2004
ROBERT L. WILLIAMS, REVIEWER
PLANT I.D. # 21-191-00002
APPLICATION LOG # 50254
AI # 3400

SOURCE DESCRIPTION:

Carmeuse Lime & Stone, Inc (formerly known as Dravo Lime, Inc) Black River Operation in Butler, Kentucky is a lime manufacturing facility. They also ship limestone that is too small to be calcined in the kilns.

They are currently operating under:

Permit O-89-088 (Amended), signed February 27, 1991, which covers their limestone operation, coal operation, Kilns #1, #2, and #3, with their existing lime processing, the hydration process, and the haul road and yard area;

Permit C-90-029, signed February 20, 1990, which covers the addition of a portable crushing and screening unit; and

Permit C-93-032, signed August 12, 1993, which is a PSD permit covering Kilns #4, #5, and #6 (which was not constructed) and additions to the lime processing.

COMMENTS:

TYPE OF CONTROL AND EFFICIENCY

The particulate emissions from the conveyors are controlled by water spray (control efficiency of 90%), moist material (control efficiency of 90%), enclosures (control efficiency of 90%) and/or baghouses (control efficiency of 99.9%). The application submitted to the Division listed "water spray" as control equipment for the majority of the limestone conveyor process, but the permittee requested this be changed during the permit writing process to "moist material". After a discussion with the Regional Office, the decision was made to change "Control Equipment" to "Control" and "Water Spray" to "Moist Material" for the conveyor process and associated stockpiles during the limestone and coal handling. If any of the controls listed by the company in the application prove to be inadequate to meet the emission requirements listed in the permit, the Division reserves the right to require another form of "control equipment" be utilized to meet the permit requirements.

The CO, NO_x, and SO_2 have no controls assigned to them.

COMMENTS: (CONTINUED)

TYPE OF CONTROL AND EFFICIENCY (CONTINUED)

The emissions from haul roads (paved and unpaved) are controlled by a wet suppression method (water truck). The paved haul roads have a control efficiency of 90%, while the unpaved haul roads have a control efficiency of 70%.

EMISSION FACTORS AND THEIR SOURCE

AP-42, Chapter 11.17, Lime Manufacturing, was used for the lime processing, including the hydrate plant.

Emission Factors for limestone and coal are the standard factors used for those industries in the State of Kentucky by the Division for Air Quality's Minerals Section.

APPLICABLE REGULATIONS

The Limestone Handling is governed by **401 KAR 60:670**, New nonmetallic mineral processing plants (40 CFR 60, Subpart OOO as modified by Section 3 of 401 KAR 60:670), and **401 KAR 63:010**, Fugitive emissions.

The Coal Handling is governed by **401 KAR 60:005**, Standards of performance for new stationary sources, which incorporates by reference 40 CFR 60.250 (40 CFR 60, Subpart Y), and **401 KAR 63:010**, Fugitive emissions.

Kilns #1 and #2 are governed by **401 KAR 61:020**, Existing process operations, since they were constructed in 1970.

Kiln #3 is governed by **401 KAR 59:010**, New process operations, since it was constructed in 1976.

Kilns #4 and #5 are governed by **401 KAR 60:005**, Standards of performance for new stationary sources, which incorporates by reference 40 CFR 60.340 (40 CFR 60, Subpart HH), and **401 KAR 51:017**, Prevention of significant deterioration of air quality.

The Lime Handling is governed by **401 KAR 59:010**, New process operations; **401 KAR 61:020**, Existing process operations; **401 KAR 63:010**, Fugitive emissions; and **401 KAR 51:017**, Prevention of significant deterioration of air quality.

The Hydrate Plant is governed by **401 KAR 59:010**, New process operations, since it was constructed on or after July 2, 1975 and **401 KAR 63:010**, Fugitive emissions.

Emissions coming from the barge, trucks, and railcars, unless they are completely enclosed [truck loadout from conveyor #94-813, emission point 12 (54)], will be considered fugitive and are therefore governed by **401 KAR 63:010**, Fugitive emissions. The baghouse controls listed in the permit for the associated loadouts end at the accordion chutes or spout.

COMMENTS: (CONTINUED)

APPLICABLE REGULATIONS

A new NESHAP (MACT) Standard was signed on August 25, 2003 (**40 CFR 63, Subpart AAAAA**) with the Final Rule published in the Federal Register on January 5, 2004 that will apply to Carmeuse Lime & Stone, Inc. Carmeuse will have three (3) years from the date of publication of the Final Rule in the Federal Registar to comply with the new standard, which establishes PM emission and opacity limits for lime kilns, coolers, and processed stone handling (PSH) operations with control devices (stacks / wet scrubbers) or enclosed in a building.

PROPOSALS:

On November 12, 1999 comments to the pre-draft Title V were submitted by Jackie Morris of Kentuckiana Engineering on behalf of Carmeuse. Mr Morris stated "there were errors contained in the calculations of emissions on some of the emission points and errors in the citation of applicable requirements. Therefore, in addition to our comments, Dravo is submitting corrections to the Title V Permit Application". The Division has reviewed these comments and has noticed that the corrections in the calculation errors represent significant changes in the allowable limits set forth in the PSD permit (C-93-032). The Division will not be changing those allowables set forth in the PSD permit until detailed calculations concerning the revised allowables are submitted by Kentuckiana to the Division for review.

Carmeuse applied for a permit to construct and operate a portable lime transfer conveyor on February 10, 2002. A permit (Permit No. S-03-068, ID # 21-191-09088) was issued on June 10, 2003. This portable unit will be used at both the Black River and Maysville plants.

Carmeuse submitted an application for reject stockpiles on March 25, 2002, in response to a Notice of Violation (NOV). Information was later received due to questions concerning the reject stockpiles specifying the reject stockpiles composition to be "lime, lime and stone mixtures, lime, stone, kiln ash ring and some bricks." This material was "cleaned from beneath conveyor transfer points; picked up at load out areas; cleaned up from maintenance activities that might require a bin or kiln to be dumped; spilled or removed from a broken conveyor belt, a failed screw conveyor, or a screw conveyor with a broken/split housing, etc." Due to the majority composition of the reject material and the control methods listed for the handling of the reject material until it is disposed of in the landfill, the Division does not feel the existing coarse material handling equipment and associated controls are adequate to handle this fine post-kiln material. Therefore, this material must be handled and controlled with caution at all times, including enclosed transportation to the loadouts and reject deposition landfill area.

Carmeuse submitted an application for a name change on September 30, 2002, changing their name from Dravo Lime Incorporated to Carmeuse Lime and Stone, Incorporated. The source name will change from Dravo Lime Incorporated – Black River Division to Carmeuse Lime and Stone, Incorporated, Black River Operation. This request has been included in their Title V permit.

Carmeuse applied for a permit to construct and operate a coal / coke unloading dock on May 21, 2003, and received permission for their addition (Permit No. VS-03-006) on June 9, 2003. This addition is included in their Title V permit.

PROPOSALS: (CONTINUED)

Kiln #2 is undergoing refurbishment since being placed in standby mode in the fall of 1998, and an inquiry was received by the Division for Air Quality regarding the restart of Kiln #2 on September 29, 2003. This inquiry has been reviewed in conjunction with Mr. Sreeni Kesaraju, one of the Division's Professional Engineer consultants and Mr. Don Newell, Permit Review Branch Manager. The Division has determined that the restart will constitute a minor revision to the source due to the recent adoption of part of the NSR revisions by the State. This revision allows Carmeuse to utilize a 10 year period instead of the previous 5 year period in calculating the net emissions increase when considering Future Projected vs. Past Actual. The current actual should be calculated based on the average of the last two years of emissions or the average of any two years in a contemporaneous period of 10 years if the last two years are not representative of source's emissions. Kiln #2 will be subject to 40 CFR 63, Subpart AAAAA upon being brought back on line.

Carmeuse submitted an application for the construction and operation of a hydrate railcar loadout on December 15, 2003. This addition has been included in their Title V permit.

EMISSION AND OPERATING CAPS DESCRIPTION:

The source is major in a PSD category (>250 tons / year) with respect to particulate matter, CO, NOx, and SO2 emissions. The PSD Permit, C-93-032, requires:

The coal shall have a minimum average heating value of 12,900 BTU/pound with a maximum average sulfur content of 0.9%. The coal shall also not have a minimum average heating value or greater than average sulfur content than the coal burned during the compliance demonstration.

A Dravo Lime Internal Correspondence dated December 23, 1994 addressing the Black River Operation states "On December 23, 1994 the permit reviewer Mr. Richard Selleck in a telephone conversation reported that the burning of petroleum coke as described in the 'Compliance Test Protocol' submitted to the state on November 14, 1994 was acceptable as long as the emissions remained within permitted levels." The internal correspondence also later states: "This clears the way for the initial firing of kilns 4 and 5 with the coal/petroleum coke blend and the compliance testing." There is no record of any compliance test results being submitted to the Division concerning petroleum coke (blended fuel) currently on file. Further correspondence addressing the issue of burning a coal/petcoke blend at Carmeuse's Maysville Operation was submitted by Mr. George Love on April 14, 2000. Mr Love states, "The three original kilns have always been capable of burning petcoke. In fact, tests had been conducted to determine if a blend was appropriate from the lime quality standpoint. No modifications whatsoever are, or would be required to accommodate the use of this material". He also states in this same correspondence that "The matter of solid fuel combustion in #4 will require the PSD review and permit modification, as was discussed in the (March 2, 2000) meeting." These issues were addressed by Mr. Dan Gray, PE, Permit Review Branch Manager, on April 25, 2000, to Mr. Love:

EMISSION AND OPERATING CAPS DESCRIPTION: (CONTINUED)

"As you are aware, the Division has received similar requests from some of the electric power generating plants. As part of their Title V permit review and approval process, the Federal Environmental Protection Agency (EPA) has advised the Kentucky Division for Air Quality that petcoke is an alternative fuel or raw material, and its use therefore, is a change in the method of operation. Whether or not the use of the alternative fuel or raw material would be exempt from being considered a modification depends on whether the source was capable of accommodating its use prior to January 6, 1975. EPA considers the use of petcoke to be exempt only if the source considered the use of petcoke in its design prior to January 6, 1975 and has plans and/or specifications to document the intended use of the petcoke.

Therefore, for the Division to be able to honor your request and allow the use of petcoke by the older three units, the Division requires documentation to demonstrate that the equipment was designed to use the petcoke prior to January 6, 1975. Alternatively, you can provide information to demonstrate that the potential emission increase associated with the proposed modification would not equal or exceed the PSD significant levels."

Although the above referenced correspondence addresses the burning of petcoke or other alternative blended fuel at Carmeuse's Maysville Operation, the same response would apply to Carmeuse's Black River Operation. Therefore, the burning of petcoke or other alternative fuel will not be authorized in Kilns #1, #2, or #3 until the documentation requested in Mr. Gray's letter has been submitted and reviewed by the Division. If the documentation cannot be provided, then a PSD review and request for a permit modification must be submitted to the Division for review before authorization to burn petcoke in Kilns #1, #2, #3, #4, and #5 is approved.

When Kiln #2 in brought back on line, testing will need to be completed in accordance with the permit conditions and the results submitted to the Division for approval prior to placing it back operationally on line.

The maximum lime production rate from kilns #4 and #5 is 46 tons/hour, each. The particulate emissions from each kiln shall not exceed 0.60 lb/ton of stone feed [0.41 lb/ton of lime output (0.02 gr/acfm)]. The visible emissions discharged into the atmosphere from each kiln shall not exceed 15% opacity when exiting from a dry emission control device. The carbon monoxide, nitrogen oxide, and sulfur dioxide emissions from each kiln shall not exceed 91.67 lbs/hour, 128.33 lbs/hour, and 22.97 lbs/hour, respectfully.

The particulate emissions from Kiln #2 after restart shall not exceed 0.12 lb/ton of stone feed. Operating limits are established in Table 2 to Subpart AAAAA of Part 63.

The visible emissions associated with the Lime Handling, excluding the Hydrate Plant, shall not exceed 7% opacity. The visible emissions associated with the Hydrate Plant shall not exceed 20% opacity.

PERIODIC MONITORING:

Due to the product produced at Carmeuse Lime & Stone, Inc Black River Operation, it is imperative that the monitoring requirements listed in the permit be followed to ensure that any problem resulting from a control or equipment malfunction/failure be minimized as much as possible.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or

recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.